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EXAMINER

GUHARAY, KARABI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/145,595

Applicant(s)

LEE, JI UNG

Examiner

Karabi Guharay

Art Unit

2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 36-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-46 and 52 is/are allowed.
- 6) ☒ Claim(s) 36-42, 47-51 and 53-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 19. 6) ☐ Other

Art Unit: 2879

Amendment D, filed on 24 March 2003, has been considered and entered.

Claims 36, 43, 47, 51-53, and 57 are amended.

Amendments of claims 47, 51-53 & 57 overcome the rejection of claims 47-60 under 35 U.S.C. 112 second paragraph.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 36-42, 47-51 & 53-60, are rejected under 35 U.S.C. 103(a) as being unpatentable over Doan et al. (US 5229331).

Regarding claims 36, 47 & 51, Doan et al. disclose a field emission device (see column 1, line 8) comprising a number of cathode emitter tips (13) formed in rows along a substrate (11), a gate insulator (14,18) having a thickness that is thinner than the height of the emitter tips (Fig 6A) formed along the substrate and surrounding the cathode emitter tip 13 (see Fig 6A), a number of gate lines (15) formed on the gate insulator (14), an anode (16) being formed orthogonal and opposing the cathodes (see Fig 1, Col. 3, lines 4-24).

Doan et al. do not exemplify the anode in form of strips (plurality of anodes). However, It is conventional to have number of anodes in matrix-addressed array of cold cathode emission devices (see U.S. 5,675,210).

Art Unit: 2879

Doan et al. further disclose that a distance separating the number of cathode emitter tips from the number of gate lines is significantly thinner than a separation distance separating the number of gate lines and the substrate (see Fig 6A, Fig 6B, lines 30-31 of column 4).

Method limitations in claim 36 are not been given patentable weight since the method of forming the device is not germane to the issue of patentability of the device itself (see MPEP 2113).

Regarding claim 37, Doan et al. disclose that cathode is formed using self-aligned technique (lines 41-45 of column 2).

Regarding claims 38 & 48, Doan et al. disclose that the number of cathodes (13) include polysilicon cones (Col. 6, line 53).

Regarding claim 39, Doan et al. disclose that the cathodes (13) include metal silicides on the polysilicon cones (Col. 6, lines 51-53).

Regarding claim 40, Doan et al. disclose that the substrate (11) includes glass (column 3, lines 5-6).

Regarding claims 41& 49, Doan et al. disclose that gate lines (15) include refractory metals (column 5, lines 36-40).

Regarding claims 42 & 50, Doan et al. disclose that the number of gate lines (15) include doped silicon (column 6, line 40).

Regarding claim 53, Doan et al. discloses a flat panel display (shown in Fig 1) including essentially all the limitations of claim 47 (see rejection of claim 47) together with limitations of a row decoder and a column decoder to selectively access the pixels

Art Unit: 2879

and a processor. Though Doan does not exemplify these elements but these are intrinsic to any flat panel display system for displaying images.

Claim 54 recites essentially the same limitation of claim 37. Thus claim 54 is rejected as claim 37 (see rejection of claim 37).

Claim 55 recites essentially the same limitations of claim 39. Thus claim 55 is rejected as claim 39 (see rejection of claim 39).

Claim 56 recites essentially the same limitations of claim 41. Thus claim 56 is rejected as claim 41 (see rejection of claim 41).

Regarding claim 57, Doan et al. disclose a flat panel display comprising all the claimed limitations of claim 53 (see Rejection of claim 53), however, Doan et al. do not exemplify the anode in form of strips (plurality of anodes), including multiple phosphors. However, It is conventional to have number of anodes having multiple phosphors for color image display, in matrix-addressed array of cold cathode emission devices.

Claim 58 recites essentially the same limitation of claim 37. Thus claim 58 is rejected as claim 37 (see rejection of claim 37).

Claim 59 is rejected as claim 39.

Claim 60 is rejected as claim 41.

***Allowable Subject Matter***

Claims 43-46, & 52 are allowed over the prior art of record.

***Examiner's Reasons for Allowance***

The following is an examiner's statement of reason for allowance:

Art Unit: 2879

Regarding claims 43, & 52, the prior art of record neither shows nor suggests a flat panel display including all the claimed limitations of claim 43 and claim 52, particularly the limitation of having a single gate insulator formed along the substrate and surrounding the cathode emitter tips and number of gate lines formed on the single gate insulator, wherein a distance separating the number of cathode emitter tips from the number of gate lines is significantly thinner than a separation distance separating the number of gate lines and the substrate.

Claims 44-46 are allowed being dependent on allowed base claim 43.

### ***Conclusion***

Applicant's arguments with respect to claims 36-60 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2879

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone numbers for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.G

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